

Claims

What is claimed is:

1. A combustible fire-starting assembly comprising
5 a suitable quantity of combustible alcohol-based fuel liquid held within a freestanding, combustible, alcohol-resistant and alcohol-impermeable plastic container, wherein said container is configured with at least a bottom wall and a perimeter sidewall that is continuous with said bottom wall, wherein the upper portion of said container is substantially open to the air to allow free-burning of said liquid, and wherein said
10 container is of a suitable plastic composition and said sidewall is of an adequate thickness and rigidity for said container to retain said liquid without leakage throughout the period of combustion of said liquid as said sidewall gradually diminishes in height as it melts and burns downward toward said bottom wall.

15 2. The fire-starting assembly of claim 1, wherein said fuel liquid and said container are composed of materials consisting essentially of carbon, hydrogen and oxygen atoms which, upon combustion, produce water and carbon dioxide, and are substantially free of chlorinated compounds.

20 3. The fire-starting assembly of claim 1 wherein said suitable quantity of combustible, alcohol-based fuel liquid is between approximately 1 and 10 fluid ounces.

25 4. The fire-starting assembly of claim 1, wherein said suitable quantity of combustible alcohol-based fuel liquid is between 2 and 6 fluid ounces.

5. The fire-starting assembly of claim 1, wherein the principal alcohol in said liquid is selected from the group consisting of 1, 2, and 3 carbon atom-containing alcohols, and combinations thereof.

30 6. The fire-starting assembly of claim 5, wherein said principal alcohol is selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, and combinations thereof.

7. The fire-starting assembly of claim 1, wherein said alcohol-based fuel liquid comprises ethanol and at least 6% by weight isopropanol, wherein enhanced and sustained flame visibility is provided by the presence of said isopropanol in said fuel liquid.

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8. The fire-starting assembly of claim 1, wherein said alcohol-based fuel liquid further comprises between 1% and 35% by weight water, wherein said water reduces the rate combustion of said liquid and the rate of heat transmission to said container.

10 9. The fire-starting assembly of claim 1, wherein said fuel liquid further comprises an effective amount of at least one bittering agent.

15 10. The fire-starting assembly of claim 1, wherein the composition of said alcohol-based fuel liquid provides enhanced flame visibility upon combustion, said composition comprising

20 between approximately 65% and 100% by weight of a mixture of alcohols comprising ethanol and isopropanol, wherein isopropanol comprises between approximately 6% and 66% by weight of said composition and ethanol comprises between approximately 34% and 94% by weight of said composition, and wherein the weight ratio of said isopropanol to said ethanol in said composition does not exceed 2:1; and

25 11. The fire-starting assembly of claim 1, wherein said container is fabricated from at least one thermoplastic resin selected from the group consisting of polyolefins, polyesters, polycarbonates, and combinations thereof.

30 12. The fire-starting assembly of claim 1, wherein said container is fabricated from at least one thermoplastic resin selected from the group consisting of polyethylene, polypropylene, polyethylene terephthalate and combinations thereof.

13. The fire-starting assembly of claim 1, wherein said container measures between 0.5 and 3.0 inches in height and between 2 and 8 inches in diameter or width, and is configured in the form of an open bowl or tub.

5 14. The fire-starting assembly of claim 1, wherein said adequate thickness of said sidewall is between approximately 0.010 and 0.040 inches.

15. The fire-starting assembly of claim 1, wherein said alcohol-based fuel liquid further comprises at least one thickening or gelling agent.

10 16. The fire-starting assembly of claim 1, wherein said alcohol-based fuel liquid comprises a thickening or gelling agent in an amount effective to produce an absolute kinematic viscosity at 20°C of from 250-100,000 cp.

15 17. The fire-starting assembly of claim 1, wherein said alcohol-based fuel liquid comprises a thickening or gelling agent present in an amount from 0.1% to 5% by weight of said fuel liquid.

20 18. The fire-starting assembly of claim 1, wherein said alcohol-based fuel liquid comprises a thickening or gelling agent present in an amount from 0.2% to 1% by weight of said fuel liquid.

25 19. The fire-starting assembly of claim 1, wherein said liquid contains a thickening or gelling agent selected from the group consisting of cellulose derivatives, natural gums, inorganic thickeners, and synthetic homopolymers and copolymers having from 1 to 30 carbon atoms per monomer unit.

30 20. The fire-starting assembly of claim 19, wherein said thickening agent is a cellulose derivative selected from the group consisting of hydroxycellulose, hydroxyalkylcellulose, and carboxymethylcellulose.

21. The fire-starting assembly of claim 20, wherein said hydroxyalkylcellulose thickening agent is selected from the group consisting of hydroxyethylcellulose, hydroxypropylcellulose, and hydroxypropylmethylcellulose.

5 22. The fire-starting assembly of claim 19, wherein said thickening agent is a synthetic homopolymer or copolymer selected from the group consisting of polyacrylic acids, polyacrylic acid esters, polyacrylic acid amides, polymethacrylic acids, polymethacrylic acid esters, polymethacrylic acid amides, polyvinylacetate, and polyvinylpyrrolidone.

10 23. The fire-starting assembly of claim 19, wherein said thickening agent is a natural gum selected from the group consisting of acacia, alginate, carrageenan, guar, karaya, pectin, tragacanth, and xanthan.

15 24. The fire-starting assembly of claim 19, wherein said thickening agent is an inorganic thickener selected from the group consisting of silicas and clays.

20 25. The fire-starting assembly of claim 1, wherein said assembly further comprises an alcohol-impermeable sealing cover film sealingly attached to the upper edge of said perimeter sidewall to form either a hermetic or a removable seal over said container, wherein said sealing cover film, together with said container, prevent leakage and evaporation of said liquid during storage and shipping.

25 26. The fire-starting assembly of claim 25, wherein said assembly further comprises a protective overcap lid placed over said sealing cover film and secured to said perimeter sidewall of said container.

30 27. The fire-starting assembly of claim 25, wherein said sealing cover film is selected from the group consisting of induction-sealable thermoplastic films, heat-sealable thermoplastic films, and foil-thermoplastic composite sheets.

28. A combustible fire-starting assembly comprising

a suitable quantity of combustible alcohol-based fuel liquid; and
a combustible means for containing said fuel liquid without leakage while allowing combustion of said fuel liquid and said combustible means.

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29. A combustible heat-providing assembly comprising
a suitable quantity of combustible fuel liquid held within a freestanding, combustible,
fuel-resistant and fuel-impermeable plastic container, wherein said container is
configured with at least a bottom wall and a perimeter sidewall that is continuous with
10 said bottom wall, wherein the upper portion of said container is substantially open to
the air to allow free-burning of said liquid, and wherein said container is of a suitable
plastic composition and said sidewall is of an adequate thickness and rigidity for said
container to retain said liquid without leakage throughout the period of combustion of
said liquid as said sidewall gradually diminishes in height as it melts and burns
15 downward toward said bottom wall.

30. A method of igniting charcoal and wood fires comprising
igniting the fuel in an assembly of claim 1, and
allowing said assembly to burn beneath a suitable quantity of charcoal or wood to be
20 ignited for a time sufficient to ignite said quantity of charcoal or wood.

31. The method of claim 30, wherein said assembly comprises a container sealing sheet,
further comprising piercing or otherwise disrupting said container sealing sheet of the
25 container in said assembly prior to igniting said fuel, wherein said assembly is an
assembly of claim 25.

32. The method of claim 31 wherein said suitable quantity of charcoal is at least 2 pounds.

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33. A method for heating a material, comprising

igniting the fuel in an assembly comprising a suitable quantity of combustible alcohol-based fuel liquid held within a freestanding, combustible, alcohol-resistant and alcohol-impermeable container, wherein said container is configured with at least a bottom wall and a perimeter sidewall that is continuous with said bottom wall, wherein the upper

5 portion of said container is substantially open to the air to allow free-burning of said liquid, and wherein said container is of a suitable composition and said sidewall is of an adequate thickness and rigidity for said container to retain said liquid without leakage throughout the period of combustion of said liquid as said sidewall gradually diminishes in height as it melts and burns downward toward said bottom wall; and

10 allowing said fuel to burn beneath said material.

15 34. A kit comprising
at least one combustible fire-starting assembly of claim 25, and
a quantity of charcoal lumps suitable for preparing a charcoal fire.

35. The kit of claim 34, wherein said assembly is an assembly of claim 26.

20 36. The kit of claim 34, wherein said quantity of charcoal is at least 2 pounds.

37. The kit of claim 34, further comprising printed instructions for use.